

SAN ANTONIO
SIGGRAPH
≡2002≡

Recreating the Past

Alan Chalmers

Kate Devlin

Paul Debevec

Philippe

Martinez



SAN ANTONIO
SIGGRAPH
2002

Recreating the Past

**Representation and
Interpretation**

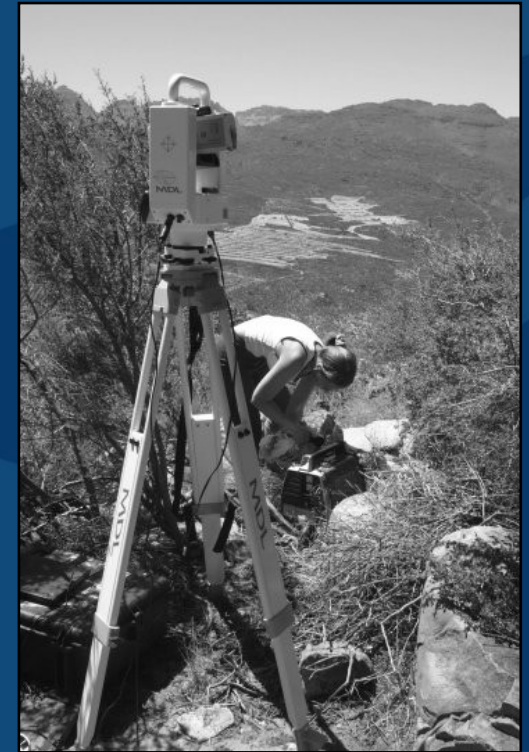
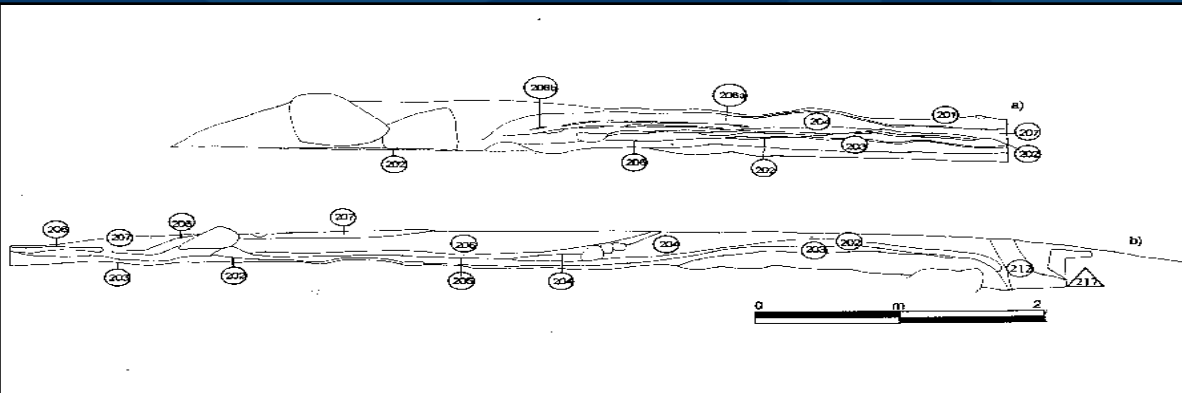
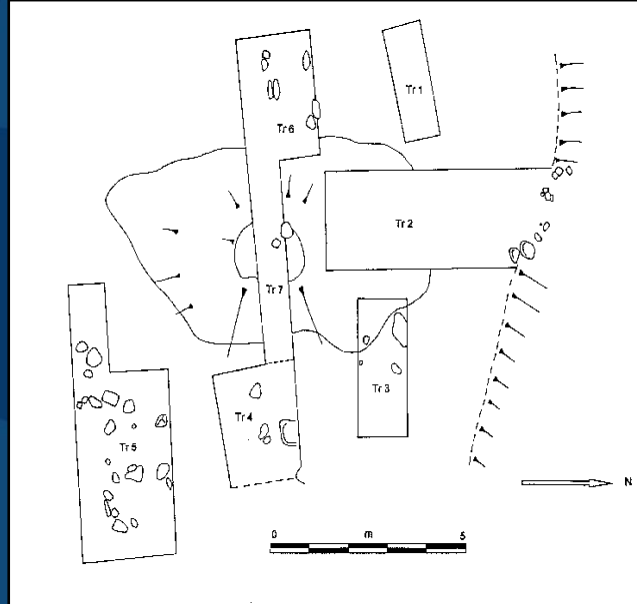
**Kate Devlin
Duncan Brown**

Representation and Interpretation

- **Archaeological illustration**
- **The idea of realism**
- **Representing for a purpose**
- **Misinterpretation**
- **Setting standards**
- **Developing new hypotheses**

Recording sites

SAN ANTONIO
SIGGRAPH
2002



Archaeological Representation: a history

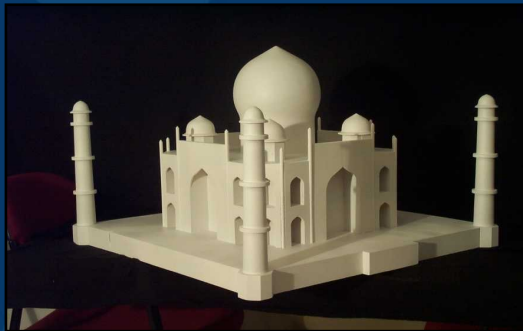
- Medieval drawings of archaeological sites
- Antiquarian interest during the Renaissance
- Systematic illustration established in C18
- Archaeology becomes a discipline in C19
- Potential of photography (especially aerial) realised after WWI
- CAD developed in 1970s
- 3D computer visualisation begins in 1980s
- GIS in use in archaeology from 1980s onwards
- VRML established in 1990s

The present...

SAN ANTONIO
SIGGRAPH
2002

Multi-sensory and mixed reality applications:

**Physical and perceptual realism,
AV displays, total immersion
(CAVE), shaderlamps**



Visualising the data

SAN ANTONIO
SIGGRAPH
2002



From dataset → wireframe → rendering

Case Study: Stonehenge

SAN ANTONIO
SIGGRAPH
2002

Stonehenge, World Heritage Site, Wiltshire, UK.

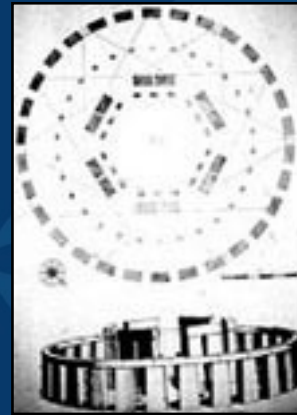
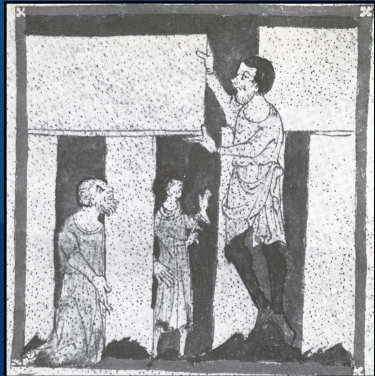


Photographer: Ian Britton ©FreeFoto.com

Case Study: Depicting Stonehenge

SAN ANTONIO
SIGGRAPH
2002

Fourteenth century through to the present day



Terms and Concepts

- **Reconstruction - an objective rebuilding**
- **Representation - a subjective interpretation**
- **What do we mean by 'realism'?**
- **Virtual Reality vs. hyperreality**

Defining realism

- **Everyone has their own version of reality - we bring our own years of experience to all that we view.**
- **Perceptual realism: when a generated scene evokes the same response as the original scene?**

The tangible referent



We try to emulate a 'tangible referent'.

PROBLEM: we do not have a reality with which to compare our scenes.

How do we choose which aspects of a multi-faceted site to represent?

Context

Representations must be placed in context:

- **Temporal**
- **Social**
- **Emotional**



Representing for a purpose



- **FOR THE ARCHAEOLOGIST** - establishing spatial relationships, investigating new hypotheses
- **FOR THE COMPUTER SCIENTIST** - new graphics techniques
- **FOR ADVERTISING** - PR for companies
- **FOR THE PUBLIC** - educational, entertainment

Misinterpretation

- **A single site can be interpreted in many different ways (e.g. Dewlish Roman villa project).**
- **We see what we want to see - our synthesised scenes work a bit like Rorschach inkblot tests.**
- **The decision-making process that led to a particular interpretation needs to be documented.**

Setting standards

- **METADATA - information about information. Need produce a standard format and standard input.**
- **PROVIDING ALTERNATIVES - offering more than a single interpretation. Need ways to present alternative representations.**
- **PRESERVING INFORMATION - keeping data accessible. Beware the advances of technology!**

Developing new hypotheses



Computer graphics offers us a chance to test ideas in a safe and controlled manner.

We are no longer limited to visualising data in two dimensions.

We can recreate past environments and change the variables.

Making it meaningful



We must consider:

- **The questions that we want answered**
- **Context**
- **Purpose**
- **Target audience**
- **Supporting information**

...in order for our images to be useful.